

REMARKS

Claims 1-19 are pending in the subject application.

Applicants have amended claims 1-2, 4, 7-9, 11, and 13 to more particularly point out and distinctly claim the subject matter of the invention. The amendments are self explanatory and supported throughout the specification as originally filed. No new matter has been introduced.

Applicants request favorable reconsideration of the subject application in view of the amendments and following remarks.

Claim Objections

Claim 4 is objected to because of informalities.

In response, Applicants have amended claim 4 to correct the informalities. Accordingly, the objection is overcome.

Claim Rejections under 35 USC§112

Claims 1-4 and 7-8 are rejected as being indefinite under 35 U.S.C. §112, second paragraph.

In response, Applicants have amended claims 1, 2, 4, 7, and 8 to more particularly point out and distinctly claim the subject matter of the invention. Accordingly, the rejection has been overcome.

Claim Rejections under 35 USC§103

Claims 1-4, 9, and 11 are rejected under 35 U.S.C. §103(a) as being obvious over Crimmins et al., U.S. Patent 6,181,255 (Crimmins patent), in view of Prange et al., U.S. Patent 7,199,376 (Prange patent).

Applicants respectfully submit that the claimed invention as set forth in the amended claims 1-4, 9, and 11 are patentable over the combination of the Crimmins patent and Prange patent, and there is no prima facie case of obviousness.

(1). With regard to Claims 1 and 9

First, the Prange patent is no an analogous art, and there is no motivation for one of ordinary skill in the art to combine the cited 2 patents. The Prange patent relates to monitoring a condition of chlorophyll containing matter, while the Crimmins patent is in the field of digital signal transmission. The Prange patent does not disclose that the pulse groups can be used for binary coding. The two fields are so widely distinct and remotely related that it would be impossible for one of ordinary skill in the art to combine the teachings from both patents. Moreover, one of ordinary skill in the art of digital signal transmission would not apply the Prange patent for achieving an object, *i.e.*, different duration times, of the present invention.

Second, even if the cited references are combined, they still fail to teach the invention as set forth in claims 1 and 9. In the Prange patent, the pulse groups having different frequencies and same number of pulses (Fig. 4A) are provided in order to directly achieve different intensity of the light source. However, in the present invention, the pulse groups having different frequencies and same number of pulses are provided in order to achieve different duration times of the pulse groups which are used to distinguish binary digits "0" and "1". The pulse groups having different frequencies and same number of pulses of the Prange patent, and the present invention have distinct functions.

Further, in the present invention, it is affirmable that the pulse groups having different frequencies and same number of pulses have different duration times, and the duration times are interested value for the inventive binary coding. The intensity of the pulse groups is uninterested and is not detected in the present invention. In

contrast, in the Prange patent, it discloses only that the pulse groups having different frequencies and same number of pulses have different intensity of the light source, meanwhile, the duration times of the pulse groups are uninterested values.

The Prange patent discloses two kinds of pulse groups as shown in Fig. 4A, however, in practice, there are more pulse groups, which have different frequencies from the shown two kind of pulse groups, to be used in order to adjust the intensity of the light source (see Fig. 3). For binary coding, only two kinds of pulse groups are needed to represent binary digit "0" and "1". Thus, the Prange patent can not give any suggestion to use the pulse groups for binary coding.

In principle, any two signals (such as two pulse groups) which have any difference from each other can be used to represent binary digits "0" and "1" for binary coding, however, how to select the two signals for better effects, such as higher transmission rate, easier decoding and easier implement, is an inventive and creative work. In the present invention, two pulse groups which have different frequencies and same number of pulses are selected to represent binary digits "0" and "1" for binary coding, and thus higher transmission rate, easier decoding and easier implement with other better effects can be obtained (refer to the specification of the application). In the prior art, no suggestion has been give to indicate that the pulse groups in the Prange patent will have these advantages when they is used for binary coding. The combined teachings of the 2 patent do not arrive at the present invention.

(2) Claim 2

The Crimmins patent fails to disclose that pulse groups have different duration time. Oppositely, the pulse groups corresponding to binary digits "0" and "1" in the Crimmins patent have same duration times. In Figures 9A & 9B, col.11, lines 54-67, the "1" bit is represented by an initial 20 kilohertz square wave for 800

microseconds, followed by 800 microseconds of a 10 kilohertz square wave, *i.e.*, the duration time of "1" bit is $0.8\text{ms} + 0.8\text{ms} = 1.6\text{ms}$, which is equal to the duration time of 1.6ms of "0" bit. From Fig.9D, the "1" bit is a combination of two section having different frequencies. As discussed, *supra*, the Prange patent failed to implement the missing teaching in the Crimmins patent. Therefore, the combined patents neither teach nor disclose the claimed invention in claim 2.

(3) Claim 3

Since claim 3 depends on claim 2, claim 3 incorporates all the claim limitations of claim 2. The combined references do not teach claim 2, thus, claim 3 is patentable over the combined references as well.

(4) Claims 4 and 11

As discussed, *supra*, the Crimmins patent fails to disclose that the sequence of pulse groups is divided according to the said same defined number because the pulse groups of "0" and "1" have different numbers of pulses. Therefore, the combined patents neither teach nor disclose the claimed invention in claims 4 and 11, and claims 4 and 11 are patentable over the references.

(5) Claims 5, 6, 13, 15, 18, and 19

As discussed, *supra*, claims 4 and 11 are patentable over the references. Accordingly, claims 5, 6 which depend on claim 4 are also patentable. As to claims 13, 15, 18, and 19, for the same reasons set forth in the discussion regarding claims 1, 2, and 9, the cited patents in combination fail to teach the claimed invention as set forth in claims 13, 15, 18, 19. Therefore, these claims are patentable over the cited patents.

Allowable Subject Matters

The Examiner's Action indicated that claims 10, 12, 14, 16, and 17 are allowable if rewritten in independent forms.

In response, Applicants submit that in view of the amendments and remarks, Applicants believe that all claims 1-19, as amended, are in condition for allowance, early notice of which is requested.

A fee of \$60 is required for a one-month extension for filing this response. A separate Petition for Extension of Time and Fee Transmittal sheet accompanies this response. Should any other fee be required, please charge the same to Deposit Account No. 50-2586 and notify Applicants' attorney.

Respectfully submitted,
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